NEWSLINE

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Community celebrates physics

Community leaders from throughout the region got a look at some of the Laboratory's premier research facilities — and they liked what they saw.

After touring the Center for Accelerator Mass Spectrometry, Joyce Shapiro of Pleasanton said, "I thought the tour was fascinating. I liked the enthusiasm of the scientist who made our presentation.

"It's great to find out how you can do testing that provides

See **COMMUNITY,** *page 4*

Mayor Marshall Kamena presents Wayne Shotts with a Yea of Physics proclamation from the City of Livermore.

JACQUELINE MCBRIDE/NEWSLINE

From nanoscale to cosmic, physics of the future will forge new science frontiers

By Anne M. Stark

NEWSLINE STAFF WRITER

The future of physics reaches well beyond the boundaries that we as humans know today.

It's an area where the minuteness of molecules can tell us as much about ourselves as the grandeur of the universe.

A group of Laboratory experts — including former Lab Director John Nuckolls, Deputy Director for Science and Technology Cherry Murray, Biosciences Associate Director Elbert Branscomb, Karl van Bibber, deputy director for the Laboratory Science and Technology Office, and Leslie Rosenberg, a Physics and Advanced Technologies physicist and leader of the axion search — on Wednesday discussed this and other emerging physics research during the Future of Physics panel.

More Year of Physics, pages 3,4,5

Hosted by Bruce Tarter, director emeritus, the discussion was a glimpse into the next 20 years of physics research in nanotechnology, biology, fusion, high energy physics and dark matter and energy — all active fields of research at the Laboratory.

"Use your imagination to fill in the blanks in

See **PHYSICS,** *page 4*

Science Day marks Einstein centenary

By Don Johnston

NEWSLINE STAFF WRITER

From the big bang, black holes, novel light sources and superconducting flux qubits to terascale computational chemistry and using optical tweezers to study biological motors, the Laboratory on Monday celebrated the science spawned from Albert Einstein's seminal work.

"This day is going to be a joyous celebration of physics for the Lab and the community in which we live and work," said

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JACQUELINE MCBRIDE/NEWSLINE

Jerry Paul, principal deputy administrator for NNSA, paid tribute to the Lab's scientific accomplishments.

Recognition of excellence awarded to DNT teams for NNSA weapons work

David Schwoegler

NEWSLINE STAFF WRITER

Good things come to those who wait — at least proverbially speaking. But that was exactly the case last Monday, when Defense and Nuclear Technologies' Associate Director Bruce Goodwin joined the National Nuclear Security Administration's Principal Deputy Administrator Jerry Paul in presenting the "Weapons Recognition of Excellence" awards —

See **WEAPONS EXCELLENCE,** *page 8*

Regents vote to pursue Los Alamos contract

The University of California Board of Regents voted Thursday to pursue continued management and operations of Los Alamos National Laboratory by submitting a competitive proposal to the U.S. Department of Energy in response to the final request for proposals that was issued on May 19.

Acting on the recommendation of UC President Robert Dynes, the regents voted to grant Dynes the authority to submit a proposal to the Department of Energy (DOE) by the July 19 deadline. The final bid will be submitted by a UC and Bechtel-led team that includes BWX Technologies Inc. (BWXT) and Washington Group International, as well as a consortium of New Mexico higher education institutions.

The regents also voted to appoint Michael Anastasio the director of Los Alamos National Laboratory, contingent upon the university and Bechtel-led team being awarded the contract for future management of Los Alamos. Anastasio, a nuclear physicist, has more than 25 years' experience in national security and nuclear weapons and has led Lawrence Livermore National Laboratory since 2002. On May 17, UC and Bechtel National-led team named Anastasio as the team leader in the competition preparations for Los Alamos National Laboratory.

"The UC-Bechtel led team is perfectly positioned to preserve the world-class scientific mission of Los Alamos while maximizing the quality and accountability of the laboratory's business, management, security and operational functions," said Dynes.

Homeland Security

Detection system ready for delivery — Page 2

Week of science focuses on Lab physics — Pages 3,4,5

LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar, page 4

Wednesday 1

The second road show in a month by the **Caltech Center for Simulation of Dynamic Response of Materials** comes to the Laboratory today from 8:30 a.m.-4:30 p.m. in Bldg. 123, conference room A. Presentations given by Caltech will be held at 10:30-11:45 a.m., and 1-3:30 p.m. A small poster session will be held at 3:30 p.m. Seating for the talks is limited. For more information, contact Melissa Odom, odom2@llnl.gov.

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The LLNL Engineering Department and the LLNL Library present **"Engineering Day: Information Resources for Engineers"** today at 9:30 a.m. and 4 p.m. in the Training Center, Trailer 1879. Learn how to streamline workflow by using Information Handling Service (IHS) and IEEE research products. Presentations will be at 10 a.m., 11 a.m., 1:30 p.m. and 3 p.m. Contact Dennis Lai, 2-5854, or lai3@llnl.gov, Library group leader, for more information.

Friday 3

All LLNL and Sandia post docs are invited to attend the **post doc summer picnic** today at Del Valle Park in Livermore. Family members are welcome. Go to the post doc bulletin board at http://step.llnl.gov/postdoc/ and click on "scheduled events" to register. The cost is $5 per person and $1 for each additional person. Tickets must be purchased in advance from Kat Swan, swan9@llnl.gov, Bev Williams, williams92@llnl.gov, Hans Aichlmayr, htaichl@sandia.gov, Elena Berman, berman2@llnl.gov, Reed Patterson, patterson31@llnl.gov, or Anne Clatworthy, clatworthy2@llnl.gov. For more information call Swan, 3-8679, or Clatworthy, 3-1464.

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Applications for Student-Employee Graduate Research Fellowships **(SEGRF)** for UC students are now being accepted through June 30. LLNL, in partnership with the University of California, provides graduate research fellowships for students to carry out research in subjects related to the goals and missions of the Laboratory. This research must be part of the student's pursuit of a Ph.D. and must be carried out at LLNL. Fellowships will be awarded on a competitive basis, using the criteria described on the Web at: http://segrf.llnl.gov

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"Technology Today," a television show produced by the Public Affairs Office, commemorating the "World Year of Physics 2005" will be shown daily, every half hour, on Lab TV channel 4. The program can also be seen on Channel 30, CTV, the cable access channel in the Tri-Valley. This special program focuses on how Albert Einstein's discoveries have influenced nearly every endeavor at LLNL. Lab personnel featured include: Bill Goldstein, Neil Holmes, Bruce Remington, Jeff Wisoff, Tammy Jernigan, Bill Craig, Simon Labov, Ed Moses, Bruce Tarter and Michael Anastasio.

Lab detection system ready for delivery

A prototype radiation detection system that can distinguish between innocuous and suspicious radiation sources at airports, border crossings and seaports is scheduled for delivery to the U.S. Department of Homeland Security as early as this summer.

Homeland Security

The Advanced Spectroscopic Portal Monitoring System is an advanced version of the pioneering RadScout radiation detector developed at the Laboratory. ORTEC of Oak Ridge, Tenn., a business unit of AMETEK Inc., is producing the system under a fast-track contract with the Homeland Security Advanced Research Projects Agency.

The new system will be designed to screen passengers and cargo for the presence of radioactive materials that could be used in a nuclear device or "dirty bomb," while substantially reducing the number of nuisance alarms triggered by naturally radioactive materials, industrial sources or medical isotopes.

Using high-resolution, high-purity germanium detectors based on technology developed at LLNL, the system will provide a 20-fold improvement in the device's ability to discriminate between legitimate and suspicious radioactive material, according to ORTEC. This capability "greatly improves the ability of authorities to resolve alarms without interfering with the normal flow of commerce at airports, border crossings, freight ports, transportation terminals and other points of interest to the Department of Homeland Security," the company said.

In the wake of the Sept. 11, 2001 terrorist attacks, LLNL worked closely with ORTEC to develop the Laboratory's handheld RadScout radiation detector into a commercial product that could be used by security and emergency response workers to screen for dangerous radioisotopes in luggage or shipping containers and report its results on the spot. Since the 2003 introduction of ORTEC's commercial portable radiation monitors — known as the Detective and Detective EX — the company has sold dozens of units to the Department of Energy, Department of Defense and various homeland security and law enforcement agencies.

Support group for eldercare givers to meet

Are you the primary caregiver for your aging or ill parents? Is it taking its toll on you? Are you feeling overburdened and overwhelmed? How do you find the time to take care of yourself, while balancing all your other obligations, including family, work and a social life?

The Employee Assistance Program is facilitating "Care for the Caregiver", a support program designed for LLNL workers who are caregivers for aging or ill parents. During this eight-week, on-site program, participants will discuss the stresses and challenges of being a caregiver and address the importance of their own self-care, health and emotional well being during the process.

"Care for the Caregiver" will be held Mondays from noon to 1 p.m., starting June 6 and running through July 25, in Bldg. 571, room 1301/1335. For more information contact Fran Pagliocca, MFT, CEAP, at 2-9339, or pagliocca2@llnl.gov.

Consult archives before tossing old documents

While working at the Lab, you made history. The records you're keeping in boxes and file drawers, memos, project plans, correspondence, lab notebooks, data, progress reports, annual reports, program reviews, meeting minutes, photographs, may all be important to documenting the Lab's history. Some of your documents also may have a legal retention period that has not yet passed. The Lab's Records and Archives Group (ARC) can help you make decisions about what needs to be done with your papers. ARC manager Maxine Trost and her group are happy to assist you. Contact 2-6539 or trost5@llnl.gov.

Free sign language classes offered through June 29

The Lab offers sign language classes. Beginning sign class meets Mondays and Wednesdays, from 12-1 p.m. in Bldg. 571, room 2000, May 23-June 29. Intermediate sign class meets Tuesdays and Thursdays from 12-1 p.m. in Bldg. 571, room 2000, May 24-July 21. The intermediate class is for people with some conversational sign language experience. Bring your lunch. Classes are free and no registration is required. For more information, call Carol Sandoli, 3-4385.

TV rebroadcast

The "Future of Physics Panel" will be rebroadcast on Lab TV channel 5, today (5/27) at 10 a.m., 12, 2, & 4 p.m.; Tuesday, (5/31) at 10 a.m., 12, 2 & 4 p.m.; and Wednesday (6/1) at 10 a.m., 12, 2 & 4 p.m..

Newsline

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SCIENCE DAY

Continued from page 1

Cherry Murray, deputy director for Science and Technology, in kicking off Science Day, a day of presentations thematically organized around the five papers Einstein published 100 years ago, and which "heralded the world of modern physics."

The celebration is "especially meaningful" because the Lab is one of the world's "great science and engineering institutions," but firmly based in physics, Murray said. "The founders were the progeny of Einstein's revolutionary ideas: Oppenheimer, Teller and Alvarez. The existence of the Lab is a direct consequence of the equivalence of mass and energy in the interest of national security."

She noted that the Laboratory has leveraged its work in national security to advance fundamental science in the nation's interest and that the University of California has played a key role in fostering these scientific successes.

"It's vital to the nation that our science and programs are carried out with academic freedom and that our scientists and engineers are closely coupled to the broad scientific community," Murray said. "Livermore and Los Alamos' continuing relationship with the University of California is just as important today as when the labs were founded."

Jerry Paul, principal deputy administrator for the National Nuclear Security Administration, recounted "the importance of Livermore to NNSA's missions" by highlighting Laboratory achievements in national security and basic science — from the development of submarine-based missile warheads and the atmospheric release advisory capability to the search for dark matter, adaptive optics for astronomical observation, environmental science and genomics.

"Throughout Livermore's history, the physics organization has been the birthplace of scientific concepts, and I'm sure it will continue to provide new program directions for us in the future," Paul said.

In the 21st century, collaboration between federal agencies, private industry and academia is critical to advancing science for national security, he said.

"Our future requires multidisciplinary scientific teams to solve our nation's as well as global problems. We need to challenge ourselves continuously to advance the frontiers of science in all disciplines," Paul said. "We need you to work together to combine these different disciplines. Now more than ever before, just as the federal agencies in this era of new national security threats need to work together, so too different disciplines need to work together to meet new threats. That collaboration among disciplines is the pathway to our future security, prosperity, economic growth and quality of life."

M.R.C. Greenwood, UC provost and vice president for Academic Affairs, focused on the university's relationship with the Laboratory and the challenges of continuing a long tradition of forging new scientific frontiers. "It's easy to forget, amid the contract issues and media coverage, that these laboratories and other national labs are really about excellence in science."

The basic research and national security missions of the laboratories "are really what have kept this nation great," Greenwood said.

She warned, however, "way too few of our young people are deeply interested in science and math in this country. We have begun to lose the legacy of the endless frontier."

The "endless frontier" was the treatise by physicist, engineer and presidential adviser Vannevar Bush presented to President Harry Truman, outlining the reasons why investment in fundamental science were important to the nation's future security and prosperity.

JACQUELINE MCBRIDE/NEWSLINE

Chris Barty of the National Ignition Facility explains one of the optical components of the giant laser project to a Science Day poster session visitor.

Greenwood said that investment in science is what has allowed scientists "to make Einstein's ideas real."

But she said scientists don't always understand that "when you have science in the national interest funded by the public trust, you have to be able to articulate the value of that work in ways that are meaningful to society."

Greenwood said she came to realize the importance of maintaining public interest in science when working at the White House on science policy issues. "There will be no science in the national interest if there's no national interest in science."

Livermore has proved that the national investment in science was "one of the strongest and most robust investments that could have been made in our future," she said. "That's the good news. We invested and we did well."

"But it won't last," she said, "if we're not able to rekindle and regenerate the kind of investment and deep understanding by the population of the fact that science and technology provide the great base for economic growth, economic security as well as national security."

Greenwood referenced the congressional Rudman report, put together prior to Sept. 11, 2001, underlining the importance of renewed investment in science and technology. The report concluded that the "inadequacy of our systems of research and education pose a greater threat to national security over the next quarter century than any potential conventional war," she said.

While the attacks of Sept. 11 increased patriotism, they have failed to spark the kind of interest or anxiety about national security or interest in national service that the launch of sputnik by the Soviet Union created in 1957, Greenwood said, noting that surveys show that September 11 "so far, hasn't changed the direction of courses and selection of majors and programs that most students are selecting."

Since 1970, the United States has dropped from third to 17th in the world in the proportion of 24-year-olds who were earning degrees in natural science or engineering, she said, "not far enough to say we've lost it, but not far enough up to be assured we can maintain any kind of intellectual dominance in the future."

In contrast, she said countries such as China, India and Singapore are dramatically increasing investment in science and technology research as well as education.

Closer to home, Greenwood said national testing of eighth graders shows California students score last overall and second to last in math. In response, UC is "mounting an offensive" in science and math education by providing incentives for university science and engineering students to teach and enlisting the help of industry.

In the United States today, about 60 percent to 70 percent of the freshman and sophomore students who pursue science and math leave for other disciplines, Greenwood said. "They don't leave because they're failing these courses — they're making perfectly good grades — they just don't see a career. We have to find a way to turn that around.

"We think the laboratories can be very helpful to us," she said. "We have to think differently and teach differently in order to enable the best young minds in this country to develop.

"I hope we'll keep our eye on the ball and realize that the great science that's done here today influences not only our immediate national security, but our long term economic security and personal security," Greenwood said. "We have to have institutions in this country that not only take care of the day to day criticality issue of national security, but that have got the science and technology capacity to build for the future."

Greenwood suggested that it might be time for the nation to think once again about a national defense education act. "The reality is we have to excite young people. We need a new solution to get people involved."

Robin Staffin, head of High Energy Physics in the Department of Energy Office of Science, set the stage for the day's science presentations with an overview of particle physics research in the DOE complex and internationally under the title "The Quantum Universe."

Staffin, a former A Division physicist, discussed the development of new accelerators, such as Fermi lab's Tevatron, designed to "address the most fundamental questions facing particle physics," and seeking to define "the new physics we know is around the corner, such as searches for super symmetry, a candidate for the dark matter, and the possibility of extra dimensions."

The search for answers is an international effort and the Hadron Collider project under construction at CERN in Switzerland — the "world's foremost high energy physics facility" — represents "the next energy frontier," he said.

"This is not our grandparents' universe," Staffin said. "We do not know what 95 percent of the universe is made of. We know more and more about less and less."

The goal of the wide range of research being conducted in particle physics is to fulfill "Einstein's dream" to reconcile the theories of Newton, Maxwell, Farraday and the others who laid the foundation for modern physics with his own.

Staffin suggested we may be "in the midst of another scientific revolution" similar to that represented by the ideas of 15th-century astronomer Nicholas Copernicus, who laid the foundation for modern astronomy with his heliocentric theory of planetary motion.

Science Day sessions included: Light and Matter, Astrophysics, Theory and Simulation and Physics and Physics in Biology.

BOB HIRSCHFELD/NEWSLINE

Veni, Vidi, Vinca

Ira Goldman, of the International Atomic Energy Agency, points at the site of the Vinca Institute of Nuclear Science outside Belgrade, Yugoslavia. The IAEA is working with the United States and Russia to remove the spent fuel from the closed "RA" nuclear research reactor at Vinca, which had operated with highly enriched uranium (HEU). Goldman told a Lab audience earlier this month that the United States and Russia are working with the IAEA to remove large quantities of fresh and stored spent fuel from Vinca, as well as to address environmental issues stemming from past nuclear research activities there. Goldman said his agency is encouraging nations to reduce proliferation and security risks by eliminating vulnerable HEU inventories at their research reactors, either by shutting them down completely, or converting them to proliferation-resistant low enriched uranium (LEU).

Reliving the life of Madame Curie

Susan Marie Frontczak performed "Manya: A Living History of Marie Curie," Tuesday in the Bldg. 123 auditorium. The one-woman drama recounted the struggles and triumphs of Madame Marie Curie, whose discovery of radium and radioactivity earned her two Nobel Prizes. She was the first European woman to earn a doctorate in the sciences, lecture at the Sorbonne and win a Nobel Prize in science.

Photos by Jacqueline McBride/Bryan Quintard

Teller office open house

About 95 Laboratory employees visited Wednesday afternoon during a special open house in the Bldg. 111 office of LLNL cofounder and former director Edward Teller. Among the memorabilia and items on display were some of Teller's many awards (including the Presidential Medal of Freedom and the Enrico Fermi Award), photos with six American presidents and Pope John Paul II, and even an equation on his whiteboard in his own writing. Visitors ranged from students at the Edward Teller Education Center to retired Lab scientist Ralph Moir, who worked with Dr. Teller on his last scientific paper.

PHYSICS

Continued from page 1

the areas where the speakers don't have time to," Tarter said as he kicked off the discussion.

Murray discussed the importance of nanotechnology as a multidisciplinary approach to studying the matter that makes up our everyday lives.

"It's an intersection of physics, biology, chemistry and systems engineering," she said. "You can't do it with just one of these."

On the human scale, Murray said nano science is the study of anything from one nanometer (the width of a human hair) to 100 nanometers (a common virus).

"By 2015, Moore's law is going to run out of steam," she said. "Electronics technology is already at the nanoscale."

Moore's law was coined in 1965 by Gordon Moore — who noted that the size of silicon field effect transistors decreased by a factor of two every 18 months for economic reasons.

"The real revolution in nanotechnology will be the intersection of physical sciences and engineering with biology to study the machinery of life," Murray said.

Branscomb transitioned from nanotechnology into the world of biology.

"Biology is going through an eruptive phase where it's moving into its golden age," he said. During the next 20 years or so "we'll finally figure out how life works in a very fundamental way...We'll be able to build a genome from scratch by picking our own set of bits. This will be one helluva ride."

Branscomb said physics will continue to empower life by colliding with biology at the nanoscale.

"The largest impact will be the ability for us to understand life's tricks and mimic them," he said. "There's no magic to what life does. It's just machinery. It's just chemistry."

Once we figure out how that machinery works, he said, the scientist's job will be to figure out how to use that to our advantage.

Fusion energy is another field that has a tremendous opportunity for growth. Nuckolls speculated on a fusion development renaissance in the foreseeable future.

He said the first challenge is to generate more fusion energy than is required to produce it. This may be accomplished in the next 20 years with the International Tokomak and possibly with the National Ignition Facility.

"The second challenge is economics. Fusion power plants have to be financially attractive to utilities and to the private sector," he said. Nuckolls suggested how this might be accomplished for the inertial approach to fusion energy.

"During my 50-year career, one of the Lab's great dreams has been cheap, clean inexhaustible fusion energy," he said. "When I started on this, I didn't know it wouldn't happen in my lifetime."

Starting from the tabletop experiments in the 1950s, it may take until the 21st century before 10 percent of the world's energy is produced by fusion, Nuckolls said.

High energy physics is another area where advances won't occur soon enough, according to van Bibber.

"Through the years, as each accelerator technology is developed, it runs out of steam," he said. Van Bibber discussed the advances in linear accelerators and colliders over the last decade that will "provide us with an understanding of what endows particles with mass."

He said the accelerators won't be able to keep up with the new research areas of particle physics indefinitely. He said that future discoveries will most likely emerge looking into neutrinos, now known to be massive, and their role in the universe, and the makeup of dark matter and dark energy.

Dark energy and dark matter tell us a lot about our relationship to the universe, according to Rosenberg.

From Ptolemy's belief that the Earth is the center of the universe through our current understanding that ordinary baryonic matter is a minority fraction of the makeup of the universe, Rosenberg said as physicists learn more about the universe, the more they realize that Earth plays a less significant role than originally believed.

The relationship between Moore's law and cosmology is, according to Rosenberg, "our evolving irrelevance."

"We're just an insignificant part of the pie. Not only are we not the center of the universe, but we're not even and important part of the universe and there's nothing even special about our universe," he said in jest.

From left: Bruce Tarter, Cherry Murray, Elbert Branscomb, John Nuckolls, Karl van Bibber and Leslie Rosenberg discuss the "Future of Physics" during a lively presentation Wednesday looking at how the discipline might evolve over the next 20 years. The panel discussion was one of the events marking the Week of Science.

THE LLNL 'WORLD YEAR OF PHYSICS'

COMMUNITY

Continued from page 1

a more complete understanding of human health," Shapiro said.

Even for return visitors, Lab capabilities such as the National Ignition Facility (NIF) have lost none of their luster. NIF remained the most popular tour. Anne White, a trustee of the Livermore Valley Unified School District, said, "I've been coming to NIF ever since they started digging, and every time I come it's expanded. The project is just mind-boggling."

Each year the Laboratory opens its doors to invited community leaders throughout the region to meet with senior managers, receive an update on Laboratory programs as well as a forecast for the year ahead. The event was created to allow the community to become more familiar with Lab activities and as a way for Laboratory management to hear more about important community issues. The day also included tours of Lab programs, and for the first time, a poster session of cutting-edge science and technology.

Some first-time visitors found the poster session preceding the day's events to be a good introduction to the Lab. Myla Grasso of the Pleasanton School District said, "I thoroughly enjoyed the posters. They provided a good overview of the variety of research here. I didn't realize there is such a wide variety of research at the Lab."

Above: Doug East of Computation led community guests on a tour of the Terascale Simulation Facility, a highlight of which was a view of BlueGene/L, the world's fastest supercomputer.

Above left: Guests also viewed the target chamber at NIF.

Marcia Railton of Orinda, a guest of the Livermore Valley Unified School District, said she enjoyed both the briefings and the tour of NIF. Railton was particularly interested in Deputy Director Wayne Shotts' response to a question about what the Lab is doing to promote peace around the world.

"I learned a lot about what the scientists here are doing to help other countries get together to deal with seismic problems in their regions. Anytime you can bring enemies to the table to address common problems, it's a real gain for world peace," she said. "I've also been worried about how we're keeping our nuclear arsenals up now that there's no more underground testing. Now I have the answer."

For Janice Sangster-Phalen of the Leadership Pleasanton program, there's no substitute for first-hand experience. "I like the exposure to what's going on here," Sangster-Phalen said. "You can read things in the newspaper, but it's not the same as being here and seeing it."

Above: Joel Swanson demonstrates detection technology for Jack Owens and Steve Carr during poster session.

At right, San Ramon Mayor H. Abram Wilson, Eilenn Vergino, Mark Tarte of Las Positas College and Jan Tulk.

"It was an incredible opportunity for community outreach," she added, an area resident since 1962. "This is a closed facility. I never envisioned that you would have a public day like this. I'm so impressed. I learned a tremendous amount."

Prior to the tours, guests were welcomed by Shotts, who provided an update of Laboratory programs, and briefly addressed by Jerry Paul, principal deputy administrator for NNSA, and Adm. Robert Foley, UC vice president for Laboratory Management. Shotts also introduced the Laboratory's senior management team.

Director Michael Anastasio, who is leading the University of California and Bechtel National quest to land the contract to continue managing Los Alamos National Laboratory, greeted guests in a videotaped message. "Good community relations I have come to value a great deal," Anastasio said. "This is a lesson I will carry with me into the future."

Paul highlighted the importance of the national security work conducted for NNSA at the Laboratory. "We're very much aware that community support is critical to the success of the Laboratory," he said.

Foley said the Tri-Valley community has played an important role in Livermore's success. "The community atmosphere here is good and it really shows in the work of the Laboratory. The university has strong commitments to the Tri-Valley," he said, noting the presence of the UC Davis Department of Applied Science and agreements with newly founded UC Merced.

Livermore Mayor Marshall Kamena read a proclamation from the City of Livermore marking the International Year of Physics and presented the document to Shotts. Bill Goldstein, associate director for Physics and Advanced Technologies, offered a brief, often humorous, tutorial on how Albert Einstein "set the stage for all of modern physics." Einstein himself, in the person of Lab employee Evan Rittmann, also made an appearance.

Adm. Robert Foley

Evan Rittmann as Albert Einstein with Wayne Shotts during Community Day presentation in Bldg. 123 audirorium.

Stepping to the podium to discuss physics in the 100 years since publication of Einstein's breakthrough papers on energy, light and the existence of atoms and molecules, Goldstein joked, "It's a pleasure to be with you by holographic imaging." He noted that "the first mission of the Laboratory was to apply fusion" in the development of weapons and that today "the Lab continues the effort to bring fusion energy to fruition as an energy source."

Physicists today find themselves at a juncture similar to that Einstein faced in 1905, he said, explaining that a part of Einstein's genius was reconciling the inconsistencies of the theories of his day — Newton's laws of gravity and Maxwell's work on electromagnetic radiation. "That was a monumental intellectual feat."

Similarly, physicists today are striving to resolve inconsistencies between quantum mechanics and general relativity and seeking to understand what makes up most of the universe, Goldstein said. "Ninety-five percent of the universe is something we've never seen before… The answers to the questions physicists are asking today will lead to new science in the century to come."

Classified ads

See complete classified ad listings at https://www-ais.llnl.gov/newsline/ads/

Automobiles

2002 - Nissan Altima 2.5S, 5spd, excellent condition, 69k mi, leather interior, cd/am/fm stereo, A/C, $10,500 obo. 925-625-7655

1997 - Audi A6, Loaded, 62k miles, Timing belt and waterpump already replaced, Great Condition. $9,000 925-525-2915

1996 - Jaguar XJ6 - silver blue, multi-CD changer, sun roof, power leather seats, power door locks, good condition, beautiful! $6500. 925-837-2049

1966 - JEEP J2000 all original, owned since 1968,runs good, new tires, camper shell. 2000.00 209-983-8372

2000 - Mazda 626 LX, very dependable, good cond, 4 cyl, AT, AC, CC, AM/FM/CD, power windows and locks, 109K miles, $4600/OBO. 209-640-1159

2001 - Chrysler 300M, Gold. Excellent Condition. Loaded with all. Leather interior. 60,000 miles. $13,000. 209-832-7204

2002 - Ford Windstar LX, 3.8, auto, Silver, 7 passenger, privacy glass, front & rear A/C, AM/FM/Cass/CD, New tires & wheels, etc. 52K excl. cond. $10,900 707-745-5313

1994 - Grand Cherokee Limited, new trans, batt, radiator and brakes. Excl cond. 112K miles. $5500. 925-846-7499

1987 - Nissan Pathfinder 4wd, runs good but needs work such as brakes, water pump leaks. Good tires. Needs paint but no dents. 198k mi. $1200 925-449-4796

1992 - Pontiac, Bonneville, PS,PB,PW,PL, P-seat, AC, excellent condition, 94K org. miles. $2000 OBO 925-813-2596

1993 - Jeep Grand Cherokee, V8, rebuilt auto trans, Flowmaster exhaust, good condition, $3200 obo 925-339-0237

2001 - Pontiac Grand Am GT Coupe. Excel. Cond! Very Sporty! All power, leather. 75k. $7,800. Must sell. 209-825-7810

Automobile Accessories

Axel, front from late 80s suburban, heavy duty 8 lug, 3.73 gears including brakes, 100$ or BO 925-454-8516

1:24 scale die cast stock car, limited edition, Elliott Sadler, Yates Race Team by Action Technologies. Paid $75. New in unopened box. $30 925-648-0671

Tuffy overhead two-bay radio console. Fits all Jeeps. $100.00 209-823-5845

Bicycles

TREK 4300 Good condition 280$ 1 year old 05/20/2004; 22.5; Matte Black 925-565-2139

Cannondale 3.0 series roadbike. Great shape. medium frame. No crashes. $350.00 obo 925-240-7374

Boats

Stainless Steel Mercury Propeller, NEW, Bravo Three (dual prop drive), OEM 48-823666A60, 14-1/4x24p RH SS 3BL, ($604 Merc.price), $475 925-829-4142

Cameras

New palmsize hi-res videocamera/digital camera/MP3 player. Record DVD quality video on SD memorycard. Playback on TV/computer, sacrifice for $289 415-543-3643

Sigma 28-200 zoom lens, up to 4x, Nikon mount, $100. 925-377-6537

Fuji FinePix S602 SLR-style digital camera. 6 megapixel, 6x optical 4.4x digital zoom. Uses Smartmedia, CompactFlash, microdrive. $200 925-447-1833

Nikon Zoom Wide Angle-Telephoto Nikkor 28-80mm f/3.3-5.6G Autofocus Lens. In great shape. $90 new, selling for $45. 925-462-5915

Electronic Equipment

Color printer, HP LaserJet 2550L. Brand new still in box. $350 or best offer. 925-292-2524

HP COLOR printer,like new, hardly used. Good for first printer 35.00. 510-537-7222

Computer with monitor $55.00 (works well) 925-735-6002

Technics 110 CD player/juke box, SL-MC400 $80. Holds 110 CDs. Program up to 5 groups of CDs to play consecutively. 510-530-1884

19in. Color Monitor, Dell, Exc Cond $50 Scroll Saw, Delta, Bench-top model - Great for crafts $50 925-552-6684

HP computer. 2.8ghz, 19 inch monitor, CD, DVD, optical mouse, 512RAM(?) Windows XP. $500.00 obo 925-240-7374

Giveaway

Moving boxes, all sizes, flattened for easy transport, near lab. 925-596-0165

Small DC motors, gear-motors, and power supplies. 925-443-9830

Kitchen sink-42 in.-Kohler cast iron (no chips or scratches) -3 bay triste model- Almond color, 36 in.: Stove hood, good condition- Almond color. 925-443-6149

Free! Spa that does not work with cover and two spa pumps in good condition. Must take the whole thing. 925-447-4455

Two new full-size box spring mattresses. Used in model home. 209-825-7810

Household

Oak frame day bed w/pop-up trundle, cover, cushions, 1 mattress, $250. Tables, narrow sofa-back style & square end, glass tops. Nice-$150. 925-947-1120

GE Profile Digital White Upper/Lower oven convection. Excellent condition. $300 OBO 925-963-7084

BUFFY THE VAMPIRE SLAYER DVDs. Season One. $18. Great for Buffy or Angel fans, kids or kids at heart. Commentaries & inserts. Paid $40; viewed once. 925-634-1110

Table, 45 in. round beveled glass top, silver metal frame with gold accents. 4 chairs with upholstered seats. Excellent Condition. Pictures, $195. 925-513-1108

European style glass top coffee and end tables $150, 2 sets of new draw drapes light blue make offer, high chair $10, stroller $10, all like new. 925-245-1414

Bunk beds. Tubular steel. Royal blue $75.00 209-832-2719

White iron and brass California King bed $350. Manufactured by Elliots Design Inc. Excellent condition. 925-606-6338

Redwood picnic table for 6-8 people. Good condition. $50.00 OBO. Canning jars, various sizes. $10.00. 510-582-2938

Bathroom scale, Taylor LED w/large readout, chrome plated bezel. Paid $30. New in unopened box. $20 925-648-0671

Clothes Dryer, Electric, $20, this is a deluxe model, recent production year, that needs $200 part, easy order & repair, then you have $800 dryer. 925-484-0697

Full Size mattress set, new condition, Medical Choice Royal Contour (25yr.warr.), plastic bags for moving, $140/set. 925-829-4142

Patio Heater. Full size, white with tank. great condition. $150.00 obo 925-240-7374

Bedroom furniture. Pine. California King frame on captains pedestal with drawers. Mirrored headboard. Night stands. Armoire. $750.00 209-835-8962

King matress set and 25 Cu. refrigerator both in great condition, $100 each or BO 209-983-0190

Miscellaneous

Full size mattress and box springs, Beauty Rest, used infrequently for guest room, sell $200 925-449-1823

Chipper-shredder, $50. Craftsman 5 HP chipper-shredder, 2 inch chipper. Needs carburetor rebuild. 510-733-9802

Parting out machinist boxes, mics, indicators, mag bases depth mics, and more reasonably priced 209-835-2416

Birmingham Knee-mill variable speed,XY DRO,powerfeed,Kurt vise,collets,end mills,drill chucks 3HP 3phase. $5,500 obo. 510-481-5994

Fireplace screen, gray wrought iron, 31 inch high x 51 1/4 inch wide. Paid $60. New in unopened box. $35 925-648-0671

Boat Propeller Swimmer Safety System, NEW, ladder/door sensor, ignition interrupt, inboard engines, ($70 orig.), $30. 925-829-4142

Airco 300 Amp (TIG) Heliarc Welder $500.00 or trade for small car with good body and bad engine,tools,wood chipper,scuba tanks. 925-516-7849

Rival Chrome Plated Electric Food Slicer 7 1/4 inch blade 39.00 - Naugahyde, 54 inches wide by 13 feet long, white new 40.00 925-735-6002

Oakland As tickets, 8 ea. w/parking pass for May 31 against Tampa Bay $160 value, $50 925-516-8339

Farmed/Grained beef for sale. $1.00lb harvest date September-05 925-443-3358

Motorcycles

2002 - Yamaha Banshee,FMF pipes,jet kit,K&N Filter,Paddles, Green sticker plus all stock parts. $4,200 925-525-4605

1985 - 350X 85 Honda Quad extra alloy rims with paddle wheels very strong never crashed.$2,500 230 85 Susuki Quad $1200. 510-481-5994

2003 - Yamaha TTR125 L, original owner, FMF Powercore 4 pipe, Uni air filter, MSR hand guards, new rear tire, excellent condition, 1,750 925-484-4099

1998 - BMW R1100RT, Great shape,All bags, new tires & brakes, just serviced and tuned,115k miles Ready to Ride! $4700.00 209-599-4644

1988 - Harley Davidson FXRS Low Rider, 29,000 mi.,good condition, always garaged, Leather bags, lots of chrome, windshield + extras. 925-443-2827

Music Instruments

Complete Pearl 5pc.drumkit.dbl bass pedal,4cymbals,hat,padded gig bags,almost new cond.($1400 invst.) $750 209-521-2015

Whitehall silver flute and case. needs service. great physical condition, no damage. $150.00 obo 925-240-7374

Pets & Supplies

55 gallon aquarium with metal stand. Great condition. No leaks. $125 Gravel and accessories also available. Make offer. 209-836-5764

Adorable 17 week old female Pug. AKC Registered. $800/OBO Please call 925-525-4562

Recreation Equipment

1986 El Dorado motorhome. 29 feet Class C, sleeps 6, A/C, storage, microwave, refrigerator, freezer, fully self contained, dinette. $4500 OBO. 925-456-3010

Pool, Intex, inflated size 66 inch x 16 inch round. Water capacity is 168 gallons. Ages 3 and up. New in unopened box. $10 925-648-0671

Tent. Eureka brand,roomy 3 person. Like new! $50. 925-373-6255

Nordic Track excercise machine. Works fine. $20 OBO 925-443-9830

1998 Southwind Motorhome, 454 ci engine, 36k miles, Lots of extras. Call for more info. 209-823-2504

Ridesharing

Express your commute, call 2-RIDE for more information or visit http://www-r.llnl.gov/ tsmp.

El Cerrito - Berkeley Vanpool has openings for full time or casual riders. M-F 7:45 am to 4:30 pm work schedule. 510-524-5769, ext. 3-7995

Riverbank or Oakdale - Looking for Vanpool or Carpool space 1 rider M-F hours adjustable. Starting June 20th. 209-529-0431, ext. 2-8828

San Jose - Seeking carpool partner from San Jose, on AWS 9/80 408-268-7924, ext. 2-9107

Orinda - Lamorinda carpool seeks 4th driver/rider. Meets near Hghwy 24 and St. Stephens. Lab hours 8am-4:45pm. 925-253-0498, ext. 2-9823

Services

Licensed General Contractor, remodels & all phases of const. Painting & related work, heating & AC certified installer. Free estimates. 925-570-0553

INTERIOR, EXTERIOR PAINTING Low season rates, free estimates. Its a good time for painting before the weather gets too hot. 510-537-7222

Shared Housing

Livermore - Spacious room and bath in luxury townhome. privacy with full kitchen,laundry priviledges. NS/NP $650 a month includes utilities. 925-784-0011

Trucks & Trailers

2002 - 178UD Thor Wanderer Lite travel trailer, oven/stove, micro, a/c, 2 queen beds, couch/eating area/double bed, fully contained, asking $11,000 obo 209-892-8094

2003 - 26ft Salem By Forest River. Center Kitchen, Front Bedroom W/Queen Bed. Bunk Beds A/C, Am/Fm Cd. Shower 6 Ft. Slide Out. Like New 14,000.00. 925-580-2477

1988 - Chevy crew cab 1 ton dually Silverado, A/C, dual fuel tanks, 70k miles. Excellent towing capacity. $4500 OBO. 925-456-3010

1994 - Ford Explorer Ltd,auto,a/c, 4wd,4dr,a/c,leather,180K,newtires,recent service,cruise,cd,$4000 obo 510-793-5717

1996 - Ford Ranger XLT, extra cab, good running, bedliner,long bed, cassette. 5,300.00 OBO 510-537-7222

1987 - Fleetwood/Taurus 25ft Travel Trailer, A/C unit, Sway control, good condition. $4800 209-824-2191

1985 - K5 Blazer,power windows,A.C. 350,rebuilt auto transmition,198,000 miles, runs and looks good.$2900.00 o.b.o. Leave message. 209-239-1963

1998 - Dodge 1500 quadcab, white, AC, PW, PL, 155k miles, 12k on new engine. $7.6k book = sacrifice $5k 925-577-1356

Vacation Rentals

Sooo cute beach house in Santa Cruz near boat harbor. 2 bedrm, 2 bath, 4 blks from ocean, spa. Plan ahead for summer. 925-245-1114

Kauai-Lihue Marriott great oceanview timeshare 8/28-9/11/05. 1st wk: kitchen/sofa-bed/Amenities! 2nd wk: bedroom w/TV. $1,000/wk or $1,900/2wks. 925-820-9767

Cozy mountain cabin near Arnold. 4 bedr, 2 bath. Near hiking, fishing, boating. Lots of outdoor activities. Plan ahead for summer. 925-245-1114

Arnold cabin, Highway 4 High Sierras, 4 bedrooms, 3 bathrooms, many amenities, hot tub. 209-478-0340

Tahoe Donner Cabin, 3br/2ba. Near golf, hiking, biking, fishing, boating. 125/nt. Reduced wkly rates. Donner Assoc. amenities incl. Call Al. 925-858-0419

SOUTH LAKE TAHOE - 3 Bedroom 2 Bath Chalet, nicely furnished, quiet area, park with Lake, tennis, etc., Great for family vacation. RESERVE NOW! 209-599-4644

Wanted

Wanted: Electric line-trimmer in good condition. Leave a message with specs and asking price. 925-443-8738

Share driving/gas to Denver from Bay Area June 18~~July 3. One way driver works too. Must have good driving record. 925-989-7415

Church youth made the finals and is looking for free camping gear to get them to Texas. Please Call, they leave 6/16. 209-983-8372

MOVING BOXES DESPERATELY NEEDED! Free or reasonably priced. All sizes & types okay. 209-833-9141

Ab Lounge excerciser, as seen on TV. 209-892-6186

Used PC Monitors 15 inch or 17 inch in working condition for Livermore School. 925-447-8001

Wanted: Economical used vehicle for young adult. Reliable auto or truck, reasonably priced (she has to pay for it). 925-382-4478A

Licensed General Contractor to remove my old patio door and install a new one. 209-640-7495

Due to space limitations, *Newsline* may withhold ads that have already run. They will still appear on the Web.

Tri-Valley effort seeks pen pals for military personnel overseas

Residents of the cities of Danville, Dublin, Livermore, Pleasanton and San Ramon are adopting military pen-pals serving overseas through Adopt-a-Unit Tri-Valley.

Each Tri-Valley city has "adopted" a military unit as part of an effort to provide moral support to troops serving in Iraq. The Livermore branch of Adopt-a-Unit has adopted Charlie Company, 2nd Battalion, 502nd Infantry, 101st Airborne — the "Screaming Eagles" — based at Fort Campbell, Ky.

Support is provided by local pen-pals to individual soldiers in each unit. These pen-pals send letters, cards, and CARE packages while the unit is deployed. There are approximately 70 members in the Forward Support Company of the 101st, which is leaving soon for Iraq. They include maintenance personnel, both men and women, and they would love to have pen-pals.

The LLNL Diversity Forum Group, which consists of representatives from the Employee Networking Groups and all LLNL directorates, supports the Adopt-a-Unit program. Employees or groups interested in sponsoring members of the Forward Support Company via letters and care packages, should contact Rita Wofford, 3-9918, or Chelle Clements, 3-8134.

Technical Meeting Calendar

Friday 27

CENTER FOR APPLIED SCIENTIFIC COMPUTING (CASC) / INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH (ISCR)
"HPCToolkit: The Rice Performance Tools," by Robert Fowler, Rice University. 10 a.m., Bldg. 451, room 1025, White Room. For more information, see URL (http://www.llnl .gov/casc/calendar.shtml). Property protection area. Foreign national temporary building access procedures apply. Contact: Bronis de Supinski (CASC), 2-1062, or Erica Dannenberg (ISCR), 3-2167.

CENTER FOR APPLIED SCIENTIFIC COMPUTING (CASC) / INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH (ISCR)
"Cross-Architecture Performance Predictions for Scientific Applications Using Parameterized Models," by John Mellor-Crummey, Rice University. 10:45 a.m., Bldg. 451, room 1025, White Room. For more information, see URL (http://www.llnl.gov/casc/calendar.shtml). Property protection area. Foreign national temporary building access procedures apply. Contact: Bronis de Supinski (CASC), 2-1062, or Erica Dannenberg (ISCR), 3-2167.

Tuesday 31

PHYSICS & ADVANCED TECHNOLOGIES /FUSION ENERGY PROGRAM
"The Physics of Fusion Energy Part II: Where Do We Go from Here?" by John Perkins, DNT, AX Division. 3-4:15 p.m., Bldg. 543, room 1258. Second in a series of Fusion Opportunities Forum seminars. Property protection area. Foreign national temporary building access procedures apply. Contact: Don Correll, 2-6784.

Wednesday 1

ADVANCED SIMULATION AND COMPUTING/ ASC STRATEGIC ALLIANCES PROGRAM (ASAP)
Caltech ASC computing road show. 8:30 a.m.-4:30 p.m. Bldg. 123, room A. Presentations given by Caltech will be held at 10:30-11:45 a.m. and 1-3:30 p.m. A small poster session will be held at 3:30 p.m. Seating for the talks is limited. Contact: Melissa Odom (odom2 @llnl.gov).

PHYSICS & ADVANCED TECHNOLOGIES /N DIVISION
"J-matrix Formalism in Scattering Theory and the No-Core Shell Model," by Andrey Shirokov, Skobeltsyn Institute of Nuclear Physics, Moscow. 10:30 a.m., Trailer 2128, room 1000. Property protection area. Foreign national temporary building access procedures apply. Contact: Erich Ormand, 2-8194 .

CENTER FOR APPLIED SCIENTIFIC COMPUTING (CASC) / INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH (ISCR)
"Testing Multithreaded Applications with ConTest," by Shmuel Ur, IBM Haifa Labs, Israel. 10 a.m., Bldg. 451, room 1025, White Room. For more information, see URL (http://www.llnl.gov/casc/calendar.shtml). Property protection area. Foreign national temporary building access procedures apply. Contact: Dan Quinlan (CASC), 3-2668, or Erica Dannenberg, 3-2167.

Thursday 2

CENTER FOR GLOBAL SECURITY RESEARCH
"After Iran: Peaceful Nuclear Technology, Article IV and the NPT," by Henry Sokolski, executive director of the Nonproliferation Policy Education Center. 9 a.m., Bldg. 170, room 1091. Property protection area. Foreign national temporary building access procedures apply. Contact: Karen Kimball, 3-5896.

CENTER FOR APPLIED SCIENTIFIC COMPUTING (CASC) / INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH (ISCR)
"Code Coverage," by Shmuel Ur, IBM Haifa Labs, Israel. 10 a.m., Bldg. 451, room 1025, White Room. For more information, see URL (http://www.llnl.gov/casc/calendar.shtml). Property protection area. Foreign national temporary building access procedures apply. Contact: Dan Quinlan (CASC), 3-2668, or Erica Dannenberg, 3-2167.

PHYSICS & ADVANCED TECHNOLOGIES /N DIVISION
"Nuclear Resonance Fluorescence Imaging for Non-Intrusive Cargo Inspection," by Robert Ledoux and Bill Bertozzi. 10:30 am, Trailer 2128, room 1000. Property protection area. Foreign national temporary building access procedures apply. Contact: Ron Soltz, 3-2647, or Annette Cook, 2-7856.

Friday 3

INSTITUTE FOR GEOPHYSICS AND PLANETARY PHYSICS
"The Blue Quasar Conspiracy: Maybe We Need a Recount," by Robert Becker, UC Davis. Noon, Bldg. 319, room 205. Property protection area. Foreign national temporary building access procedures apply. Contact: Wil van Breugel, 2-7195, or Lisa Lopez, 3-0250.

LIVERMORE PROJECTS COMMITTEE
"Vision Strategy & Structure in the Global Nuclear Enterprise: Eisenhower and the Search for Gesamtkonzept," by Victor H. Reis, Hicks & Associates Inc. "Dynamic Enterprise Models," by Cliff Shang, LLNL. 8:45 a.m., Bldg. 132 auditorium. All attendees must have a SP access card or obtain special approval to attend this meeting. For LLNL, contact Barbara Sherohman, 3-6379, with any SP access questions. For SNL, contact Ann Stayton, 925-294-2582, with any SP access questions. Contact: Scott Couture, 3-4100, or Frances Mendieta, 3-7825.

CENTER FOR APPLIED SCIENTIFIC COMPUTING (CASC) / INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH (ISCR)
"Autonomic Computing: The Next Era to Design and Program High Performance Computing Systems and Applications," by Salim Hariri, University of Arizona. 10 a.m., Bldg. 453, room 1001, Armadillo Room. For more information, see URL (http://www.llnl.gov/casc/ calendar.shtml). Property protection area. Foreign national temporary building access procedures apply. Contact: Ghaleb Abdulla (CASC), 3-5947, or Erica Dannenberg, 3-2617.

Tuesday 7

PHYSICS & ADVANCED TECHNOLOGIES DIRECTORATE-WIDE SEMINAR
"Future World Energy Demand and Supply: China and India and the Potential Role of Fusion Energy," by John Sheffield, Joint Institute for Energy and Environment, University of Tennessee. 2 p.m. Trailer 2128, room 1000. Common use facility. Foreign nationals may attend. Contact: John Lind, 2-5430, lindl1@llnl.gov, or Alan Wootton, 2-6533, wootton1@llnl.gov.

Wednesday 8

ADMINISTRATIVE INFORMATION SYSTEMS DEPARTMENT
"Oracle Workload Measurement," by Andy Rivenes. 10 a.m., Bldg. 361, room 1140. Property protection area. Foreign national temporary building access procedures apply. Contact: Larry Snyder, 3-0121.

Thursday 9

ENGINEERING, COMPUTATION AND E&E (CO-SPONSORS)
"Constructal Theory of the Generation of Flow Configuration," by Adrian Bejan, Duke University. 10:30-11:30 a.m., Bldg. 453, auditorium, room 1001. Property protection area. Foreign national temporary building access procedures apply. Contact: Wayne Miller, 4-4472.

Friday 10

INSTITUTE FOR GEOPHYSICS AND PLANETARY PHYSICS
"Formation and Evolution of Massive Galaxies," by Patrick McCarthy, Carnegie Observatories. Noon, Bldg. 219, room 163. Property protection area. Foreign national temporary building access procedures apply. Contact: Wil van Breugel, 2-7195, or Lisa Lopez, 3-0250.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Please submit your meetings via the new Technical Meeting Calendar form on the Web, located at http://wwwr.llnl.gov/tmc/index.html
For information on electronic mail or the newsgroup llnl.meeting, contact the registrar at registrar@llnl.gov.

DAVID SCHWOEGLER/NEWSLINE

The W62 Detonator Investigation Team: From left to right: Bruce T. Goodwin, Ronald (Wes) Davis, Douglas L. Hargrove, Lonnie C. McDavid, William C. Curtis (SNL/NM), Diane I. Chambers, Mark M. Hart, Rexford M. Morey, Paul R. Wilkins, George E. Overturf and Jerry Paul (NNSA).

WEAPONS EXCELLENCE

Continued from page 1

for work performed in 2003.

In a tent erected specifically for this purpose on the Discovery Center patio, a crowd that included families and friends watched Livermore employees receive four team awards and one individual award for excellence in weapons design and engineering.

In the latter category, William McLean was recognized for developing time, temperature and pressure-dependent models for corrosion in nuclear weapon pits and secondaries. McLean compiled and analyzed more than 40 years of publications on aging of nuclear weapon materials and components. Some contained incomplete or conflicting accounts. Yet, according to the award, "…he developed comprehensive, elegantly simple, chemically intuitive and physically reasonable models for the aging reactions that reproduced all of the reported observations." His models were validated against laboratory tests and stockpile surveillance observations. They have since been applied to all Livermore systems.

Mark Martinez's team succeeded in planning and commissioning the Joint Actinide Shock Physics Experimental Research facility (JASPER). The first plutonium shot produced the highest measured shock pressure in plutonium (Pu). This result and those that followed were the most accurate dynamic high-pressure data ever taken on Pu. Data provide tight constraints on models of the high-pressure equation of state. All of this work was accomplished under the highest standards for plutonium containment.

Jeff Hagerty led a W62 Detonator Investigation team from Livermore and Sandia. They successfully completed a major investigation involving detonator aging characteristics. In the process, they developed and qualified new tests. To assess current and future detonator performance, they performed extensive testing on stockpile-return and artificially aged components. Additionally, the team developed new diagnostic techniques that improve understanding of detonator aging along with the underlying physics of detonator initiation.

Larry Wiley's Piano subcritical experiment team was recognized for using the most complex diagnostics of any subcritical experiment to date. This effort significantly improved understanding of both ejecta formation and material damage in explosively shocked plutonium. Piano required a reconfiguration of the underground U1a facility at the Nevada Test Site, and achieved "…significant advances in imaging, radiography, velocimetry and other diagnostics." The experiment returned excellent diagnostic data from all its sources that provided a deeper understanding of the materials and processes at work in weapon primaries.

Rob Tageson led the Post-Shot Cleanup team at Site 300's Contained Firing Facility. They were recognized for extraordinary efforts meeting stringent safety requirements for the Chronic Beryllium Prevention Program during post-shot operations inside the testing chamber. Their procedures provided effective cleanup with minimum risk of beryllium exposure to personnel and to the environment, as demonstrated by avoiding personnel exposures and maintaining a low rate of action-level triggers following beryllium experiments.

Goodwin expressed both pride and pleasure as the plaques were accepted. "Today's awards are for performance in 2003," he said. "These accomplishments were very important then. And they remain just as important today."

A complete listing of the members of each team appears in the accompanying sidebar.

DNT Team members

JASPER Team: Mark Martinez, project leader; Leon Berzins, Matt Cowan, Eric Hanson, Neil Holmes, Joey MacIsaac, John Miller, Bob Thoe, John Warhus.

W62 Detonator Investigation Team: Jeff Hagerty, project leader; Diane Chambers, William Curtis, Ronald W. Davis, Douglas Hargrove, Mark Hart, Lonnie McDavid, Rexford Morey, Margaret Olsen, George Overturf, Paul Wilkins.

Piano Team: Larry Wiley, project leader; Stan Ault, Leon Berzins, Don Breithaupt, Don Carter, Steve Coleman, Dave Crozier, Ed Daykin, Walter Dekin, Mike Doman, Don Ecker, John Flam, Randy Flurer, Pat Gennaro, Dave Gire, Lee Griffith, Eric Hanson, Ray Heinle, Dave Hunt, Barry Jacoby, Bob Kost, Ed McCrea, Steve Muelder, Mark Owens, Des Pilkington, Jim Reed, Jerry Reiswig, Fred Sator, Doug Serpa, Ted Strand, Louie Tallerico, Ed Utiger, John Warhus, Rich Whipkey.

CFF Post-Shot Cleanup Team: Rob Tageson, project deader; Mike Cooper, Kevin Gunn, Carl Ingram, Gordon Krauter, Chatha Lee, Jack Lowry, Ken Newman, Larry Simmons, Doug Villela,

Office of Science visit

JOSEPH MARTINEZ/NEWSLINE

Back row from left: Tomas Diaz de la Rubia, associate director (AD) for Chemistry and Materials Science; Bill Goldstein, AD for Physics and Advanced Technologies; Jeff Salmon, chief of staff for DOE's Office of Science, and Ed Moses, acting AD for the National Ignition Facility.

Front row: Bruce Goodwin, AD for Defense and Nuclear Technologies; Scott Samuelson, DOE/NNSA Livermore Site Office; George Miller, AD-at-large; Ray Orbach, director of DOE's Office of Science; Cherry Murray, deputy director for Science and Technology; Chris Keane, NNSA acting assistant deputy administrator, and Charles Verdon, AX Division.

During his May 20 visit, DOE Office of Science Director Ray Orbach received a briefing on stockpile stewardship and toured related research facilities, including NIF and the Terascale Simulation Facility.

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